River flooding could increase under climate change

17 December 2013 - River floods are likely to occur more frequently in many parts of the world as climate change intensifies heavy rainfall, according to a new study.

Published today, the study is the first to use both climate models and river flow simulations from multiple hydrological models to look at global-scale changes in flood hazard under climate change.

Using a high-end greenhouse gas emissions scenario out to the end of this century, researchers looked at potential changes in 1 in 30 year peak river flows.

Results suggest that while decreases in extreme river flows are likely at about a third of the global land mass, increases are expected at more than half of the areas looked at. At between 5% and 30% of places, 1 in 30 year events became as frequent as 1 in 5 years.

Rutger Dankers, a Met Office scientist and lead author of the research, said: "Climate change is expected to increase the frequency and intensity of rainfall, so this study looks at how this might impact on peak river flows on the ground. We find that flood hazard increases at the majority of locations, but not everywhere, with some areas showing a consistent decrease in extreme river flows."

The large-scale patterns of change observed in this study are consistent across different hydrological and climate models.

However, at a local scale there is much more disagreement between the models, and in some river basins it is far from clear whether there will be more or less floods into the future. This suggests there is still considerable uncertainty when trying to focus on local impacts and adaptation strategies.

The study is to be published in a special issue of the Proceedings of the National Academy of Sciences (PNAS) that assembles first results of the Inter-Sectoral Impact Model Intercomparison Project, a unique community-driven effort to bring research on climate change impacts to a new level.

Contact information

Met Office Press Office: **+44 (0)1392 886655**

E-mail: Press Office

Met Office Customer Centre: **01392 885680**

If you're outside the UK: **+44 1392 885680**

Last updated: 17 December 2013